REMARKS

Claims 1-4, 6-13 and 15 are now pending in the application. Claims 1, 3, 6, 7, 9, 10 and 13 have been amended and claims 5 and 14 have been canceled. Claim 15 has been added as new. Support for the foregoing amendments can be found throughout the specification, drawings, and claims as originally filed. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen et al. (U.S. Pub. No. 2004/0165592) in view of Silverman (U.S. Pat. No. 6,731,649). This rejection is respectfully traversed.

Claim 1, as amended, recites:

> A method for providing service with guaranteed Quality of Service (QoS) in IP access networks, each of the IP access networks comprises an edge router connected to a backbone network, and an access network end device connected to subscribers, comprising:
>
> a1. a calling subscriber sending a request, to a service entity, for a service with guaranteed QoS;
>
> a. the service entity at network service control layer judging service rights of the calling subscriber after receiving the request, obtaining a calling subscriber address and a called subscriber address, and determining QoS requirement for the service, then sending a resource request to an edge router to request resources;
>
> b. the edge router corresponding to the calling subscriber and a called subscriber computing bandwidth between a access network end device and the edge router after receiving the resource request, if there are enough resources, executing c.,

> otherwise rejecting the service request of the calling subscriber; and
>
> c. if there is an upward traffic stream sent from one of the calling subscriber and the called subscriber to the corresponding IP access network for this service, the corresponding edge router informing the corresponding access network end device of the QoS requirement for the service, and the corresponding access network end device setting items of a stream classification table according to parameters for identifying the upward traffic stream contained in the QoS requirement; classifying the upward traffic stream sent from one of the calling subscriber and the called subscriber; and performing bandwidth limitation according to bandwidth parameters in the QoS requirement informed by the corresponding edge router for the upward traffic stream when matched with the items of the stream classification table, and processing the upward traffic stream when not matched as an upward traffic stream without guaranteed QoS;
>
> If there is a downward traffic stream to be sent to one of the calling subscriber and the called subscriber from the corresponding IP access network for this service, the corresponding edge router setting priority in the corresponding IP access network for this service and forwarding the downward traffic stream to the corresponding subscriber according to the priority set by the corresponding edge router.

In claim 1, if the calling subscriber wants to use the service with guaranteed QoS, the calling subscriber sends a request to the service entity. By adopting the requesting mode, the service entity can know that the calling subscriber wants to use the service with the guaranteed QoS, and takes effective actions to process the request.

In contrast, Chen at best shows that in order to dynamically establish the SVC 50, the subscriber 10 transmits a connection setup request to the connection server 25, the subscriber 10 transmits such a connection setup request for establishing the SVC 50, rather than using the service with guaranteed QoS.

Thus, Chen does not disclose or suggest the feature of “a1. a calling subscriber sending a request, to a service entity, for a service with guaranteed QoS [.]”

Claim 1 requires that after receiving the request, the service entity judges the service rights of the calling subscriber. Through judging the service rights of the calling subscriber, the service entity can determine whether the calling subscriber can use the service with the guaranteed QoS, which can avoid providing the service with the guaranteed QoS to users who do not posses the service rights and avoid the waste of the system resources.

Chen fails to disclose or suggest the feature of "the service entity at network service control layer judging service rights of the calling subscriber after receiving the request."

Claim 1 requires that the service entity determines QoS requirement for the service.

In Chen, the source subscriber 10 sends a setup connection request to the ATU-R, and the setup connection request carries the service category, the traffic descriptors and the QoS parameter, described above (paragraph [0094]). In other words, in Chen, the QoS parameters are determined by the source subscriber 10 and sent to the ATU-R.

Thus, Chen fails to disclose or suggest the feature of "the service entity at network service control layer determining QoS requirement for the service[.]"

The Examiner asserts that paragraphs 35, 56, 97, 100 and 106 of Chen disclose "the service entity at network service control layer requesting resources to IP access networks corresponding to the calling subscriber and the called subscriber, respectively, edge routers corresponding to the calling subscriber and the called subscriber judging

whether enough resources can be provided for this service according to current resource condition[.]"

Applicant respectfully traverses the assertion. Chen at best shows that the connection server 25 performs a CAC step to determine if sufficient available bandwidth exists in the ATU-Rs and DSLAMs to accommodate the connection ([paragraph 0035]), and the ATM switch 15 also performs a connection CAC to determine whether any of the pre-configured PVCs in the DSLAM 14 for this subscriber can satisfy the requirement of the connection based on traffic descriptors and QoS requirements ([paragraph 0097]). The connection server 25 and the ATM switch 15 both perform the CAC respectively.

The Examiner asserts that the connection server 25 is equivalent to the service entity, and the ATM switch is equivalent to the edge router of the present invention. Applicant respectfully traverses the assertion. In claim 1, the service entity sends the request to the edge router to request the resources and the edge router computes the bandwidth between the access network end device and the edge router after receiving the resource request. In claim 1, the service entity itself does not compute the bandwidth, but requests the edge router to compute the bandwidth.

Thus, the paragraphs cited by the Examiner do not disclose or suggest "the service entity at network service control layer sending a resource request to an edge router to request resources, the edge router corresponding to the calling subscriber and a called subscriber computing bandwidth between an access network end device and the edge router after receiving the resource request[.]"

Further, Silverman fails to cure the deficiencies of Chen. Thus, Chen and Silverman neither disclose nor suggest the subject matter of amended claim 1.

In addition, with regard to claim 3, after determining that there are enough resources, the edge router notifies the service entity and receives the conformation information from the service entity, and then step c is performed. The paragraphs cited by the Examiner merely disclose determining whether there are enough resources, but do not disclose the operations after determining that there are enough resources as required in claim 3.

With regard to claim 8, if the QoS requirement from the edge router of the IP access network for the upward traffic stream is not received, the access network end device processes the upward traffic stream sent from one of the calling subscriber and the called subscriber as an upward traffic stream without guaranteed QoS. As long as the QoS requirement is not received, the upward traffic stream, no matter what kind of service traffic, is processed as an upward traffic stream without guaranteed QoS. In contrast, in paragraph 39 of Chen, the condition for transmitting packets over default route is that the packets are sent from an application which is not associated with the new QoS connection, rather than the QoS requirement is not received.

With regard to claim 9, for LAN access, the L2 or L3 switch between the edge router and the access network end device forwards the downward traffic stream according to the priority of the downward traffic stream. The ATU-R disclosed in paragraph 88 of Chen is an ADSL remote transmission unit, rather than the L2 or L3 switch. In addition, the ATU-R is set between the source subscriber 10 and the DSLAM 14, rather than the edge router and the access network end device.

In view of the foregoing, Applicant submits that claim 1 and its dependent claims 2-4, 6-13 and 15 define over the art cited by the Examiner.

NEW CLAIMS

Claim 15 is new. Applicant believes that claim 15 defines patentable subject matter over the art cited by the Examiner.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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